

Before The  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

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Federal Communications Commission  
Office of the Secretary

In the Matter of )

Advanced Television Systems )  
and Their Impact on the )  
Existing Television Broadcast )  
Service )

Review of Technical and )  
Operational Requirements: )  
Part 73-E, Television Broadcast )  
Stations )

Reevaluation of the UHF )  
Television Channel and Distance )  
Separation Requirements of )  
Part 73 of the Commission's Rule )

MM Docket No. 87-268

COMMENTS OF MST

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## SUMMARY

MST endorses the Joint Comments filed concurrently by 73 broadcast companies and associations. MST strongly commends the Commission for the historic determination that the rapid and efficient implementation of a terrestrial broadcast ATV system would be in the public interest.

MST believes that spectrum allotment plans should not be used to repeal or relax the freeze on new stations and land mobile sharing, or for any other spectrum allocation purposes prior to the adoption of a broadcast ATV transmission standard. While such plans may be useful in focusing the issues involved in designing an ATV transmission system, it is far too early in the development and testing of ATV proponent systems to rely on hypothetical models for allocation purposes.

MST continues to have serious reservations concerning the allotment of spectrum by private negotiation or the flexible use of the broadcast bands for non-broadcast purposes. Although the limits and safeguards suggested by the Commission in the Further Notice are a step in the right direction, MST believes that the Commission should wait until we have gone considerably further in assessing the tradeoffs among spectrum requirements, quality and cost, and toward choosing a particular ATV transmission system before seriously evaluating the utility of these proposals.

MST strongly urges the Commission to assert immediately that it will take all necessary measures, including adopting transmission specifications, to assure the

implementation of a single broadcast ATV standard or family of standards. This standard should either be compatible with NTSC or sufficient spectrum should be available for simulcast, as broadcasters strongly wish to continue service to their current viewers. MST also believes the Commission should strongly encourage compatibility between broadcast ATV and other delivery media.

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Review of Technical and  
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Channel and Distance Separation  
Requirements of Part 73 of the  
Commission's Rules

COMMENTS OF MST

The Association of Maximum Service Telecasters,  
Inc. (MST)<sup>1/</sup> hereby comments on the Commission's Tentative  
Decisions and Further Notice of Inquiry, adopted  
September 1, 1988 (FCC 88-288) ("Tentative Decision").

MST has also actively participated in preparing  
and vigorously endorses the comments filed this day by 73  
broadcast companies and associations representing a  
substantial majority of television licensees ("Joint  
Comments"). Like the Joint Commenters, MST strongly

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<sup>1/</sup> MST is an organization of more than 250 broadcast  
stations dedicated to the maintenance and further growth of  
the nationwide system of locally-based, over-the-air  
television service of high technical quality. It has been  
deeply involved in activities concerning ATV, and was one of  
the leading parties in the February, 1987, petition that led  
to this proceeding.

commends the Tentative Decision for the historic determination that the rapid and efficient implementation of a terrestrial broadcast ATV system would be in the public interest.

MST takes this opportunity to file brief comments supplementing those filed on behalf of the Joint Commenters.

I. SPECTRUM ISSUES

A. Allotment Plans and the Freeze

The Tentative Decision concludes that the current freeze on accepting applications for new broadcast stations in the top 30 markets and on the proposal to reallocate unoccupied UHF spectrum with land mobile services should be maintained. Tentative Decision ¶ 96. The Tentative Decision also declares the Commission's intent to develop in the very near term a variety of specific channel-allotment schemes for the VHF and UHF bands. Tentative Decision ¶ 94.

Both of these decisions have merit. However, the Tentative Decision goes awry when it links these two otherwise unrelated decisions, declaring that the Commission intends to develop hypothetical allotment plans to permit the Commission to relax or repeal the freeze. Tentative Decision ¶ 96.

Specific allotment plans may be of some utility especially in the most spectrum-congested markets. As the Commission notes, such plans may assist system designers in more fully identifying and understanding the design

constraints presented by the tentative decisions to provide supplemental spectrum to every existing licensee and to limit broadcast ATV to the existing broadcast bands. Even as to this objective, however, it is questionable whether allotment plans that identify specific channels and lay out specific service areas in specific markets are of substantially greater utility than the kinds of system-wide availability analyses already conducted by OET and the Advisory Committee. See, e.g., Interim Report: Estimate of Availability of Spectrum for Advanced Television in the Existing Terrestrial Broadcast Bands (OET Technical Memorandum 88-1).

It may be difficult or impossible to develop more definitive plans until Mexico and Canada are prepared to coordinate their ATV assignments. Tentative Decision ¶ 66. In addition, lifting the freeze would create a "moving target" of spectrum availability that would only complicate the allocations process. Moreover, generating numerous specific allotment proposals runs a not-trivial risk of diverting attention and energy from crucial developmental and testing efforts into internecine squabbling and positioning over channel assignments.

The Commission should firmly and clearly repudiate the notion that any allotment plans generated substantially in advance of the adoption of a terrestrial broadcast ATV transmission standard can or will be used for spectrum

allocation purposes such as repealing or relaxing the freeze. As recognized in the Tentative Decision, ¶ 40, the spectrum/quality tradeoffs presented by the current array of ATV technologies is "far from clear." In point of fact, the current array of proponent ATV systems covers virtually the entire range of spectrum/quality possibilities. Tentative Decision ¶¶ 22-39.

Equally unclear are the crucial spectrum/cost relationships. Hereto the proposed systems cover the entire range of radically divergent scenarios outlined in the Tentative Decision. ¶¶ 82-92. Again, the process of identifying and quantifying the many component costs of the conversion to ATV and their relationship to spectrum use has only just begun.

Those fundamental relationships will not be significantly more clear until we have generated a great deal of laboratory and field data concerning the objective and subjective performance of the proposed types of ATV systems. As evidenced by the comments of the Advanced Television Test Center and the recent week-long series of presentations by ATV system proponents to the ATV Advisory Committee's Working Party on System Analysis, this process has begun in earnest. But because almost none of the systems are ready to be tested, actual testing of proponent systems will not be initiated until the second half of 1989 and could take up to a year and a half.



Moreover, the OET studies already conducted demonstrate that the VHF and UHF spectrum in the top markets is so congested that accommodating all existing stations will require remarkable advancements in transmission and reception technology, i.e., total or near-total elimination of UHF taboos and enormous improvements in co- and adjacent-channel interference capabilities.<sup>2/</sup> See Analysis of UHF TV Receiver Interference Immunities Concerning Advanced Television (OET Technical Memorandum 88-2); Interim Report of the FCC Advisory Committee on Advanced Television Service at 8. In other words, under virtually any set of reasonable assumptions, we know now that it is highly unlikely that there will be any "spare" spectrum in the top markets for any purpose other than broadcast ATV.

The broadcast industry has every incentive and will make every effort to see that the process leading toward the adoption of a single ATV terrestrial broadcast transmission standard is concluded as expeditiously as possible. MST believes strongly that this process can only be impeded by having Commission and industry energies diverted by pointless and potentially counterproductive efforts to identify bits and pieces of "excess" spectrum in

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<sup>2/</sup> MST urges the Commission to examine the performance of both ATV and NTSC receivers to help address these problems.

the VHF and UHF bands which might safely be released for other uses.

B. Allotment Issues

1. Demand v. Table of Allotments

The Tentative Decision posits three basic allotment schemes for supplemental ATV spectrum: 1) demand; 2) nationwide table of allotments linking specific NTSC and ATV channels; and 3) table adjusted by demand (two-step). Tentative Decision ¶¶ 139-145.

As the Tentative Decision recognizes, a prime objective of this proceeding is to maximize the possibility of replicating the existing NTSC service. Tentative Decision ¶ 82. It is now apparent that accomplishing this objective will be feasible but difficult under almost any set of reasonable assumptions. This tight margin for error magnifies greatly the penalty for suboptimal spectrum allocation. Because a pure demand scheme carries the greatest risk of suboptimal allocation, and because of the other drawbacks cited in the Tentative Decision, ¶ 140, it would be unwise to adopt such a scheme.

A definitive table of allotments, linking specific ATV channels and NTSC channels, on balance is the most expeditious method and the one most certain to maximize the total coverage of the system. The only drawbacks to such an approach cited in Tentative Decision are the possibility that the resulting table would not "reflect the preferred

choices of individual broadcasters" and, should there be insufficient spectrum to accommodate all current licensees, the lack of a mechanism for determining which stations win and which lose. Tentative Decision ¶ 141.

Neither of these concerns provides a compelling reason for abandoning the table approach. While the "preferred choices of individual broadcasters" in each market are certainly an important consideration, a far more important consideration is to protect the viability of the broadcast system as a whole. At this juncture, at least, the overriding principle in accomplishing that objective should be to approximate as nearly as possible the reach of existing stations.

In any event, it is not obvious why the "preferred choices of individual broadcasters" and other market-specific and channel-specific factors such as terrain, man-made structures, site availability and population patterns, could not be raised and considered in the context of a rule making. In Docket No. 80-90, for example, the Commission promulgated the initial table of allotments and then provided an additional opportunity for amendments to the table to account for technical missteps or market specific issues overlooked by the Commission. The process was both expeditious and efficient.

MST believes inclusion of all existing stations and existing service areas to be a fundamental prerequisite

of a broadcast ATV system. If it should nonetheless develop that there will be insufficient spectrum to provide for all existing stations, the Commission may very well be required to develop criteria for differentiating among them. As the Tentative Decision describes, all of the likely ways of doing so carry substantial practical, equitable or legal drawbacks. Tentative Decision ¶ 144. MST believes that the decision as to how to undertake that process should be made when we have a better understanding of how much spectrum will be involved and how many stations will be affected. In the meantime, the ability of proposed ATV systems to accommodate each and every existing station will be a critical issue.

## 2. Private Negotiated Allotments/Adjustments

The Tentative Decision also posits the possible use of private negotiated agreements between broadcast stations, both as a means of making initial allotment determinations and as a means of adjusting initial allotments. Tentative Decision ¶¶ 143-44, 146-49.

MST's initial comments in this proceeding set out at length its reservations as to the legality, feasibility and prudence of employing such techniques, particularly at this crucial stage in the history of the broadcast industry. MST Comments at 57-65. MST continues to believe that the Commission must play a vigorous and direct role in perpetuating the universality and the technical integrity of

the local broadcast system and should not delegate that responsibility to a series of individual decisions by ad hoc stations in specific markets.

This is not to say definitively that it would be illegal or unwise under any circumstances to employ private agreements as an allotment tool. The legal and practical concerns over the use of such mechanisms are somewhat less serious in the context of allotments than in the context of allocations among different services. And they are diminished even further to the extent that the scope of negotiated agreements is limited in the public interest, as the Commission suggests.

However, consideration of this issue is premature at this time. This issue will benefit greatly from further knowledge as to the characteristics of the proposed ATV systems, their likely spectrum needs and the spectrum available in both the affected major markets and the smaller markets on their perimeters.

### 3. 'Transitional' Non-Broadcast Use

The Tentative Decision proposes to permit broadcast ATV licensees to utilize their ATV spectrum for non-broadcast purposes during the "transition" to ATV. Tentative Decision at ¶ 150-53. However, non-ATV uses would be restricted to a "defined transitional period" and would be secondary to broadcast service, Id. ¶ 152, and non-ATV use would have to be approved by the Commission. Id. ¶ 153.

The newly proposed restrictions on ancillary use are certainly a step in the right direction. See MST Comments at 60. MST nevertheless remains concerned that "flexible use" of broadcast ATV spectrum carries significant risks of fragmenting the broadcast system and impeding the development of broadcast ATV. Moreover, there simply does not appear to be any compelling reason for taking on those risks. The only basis cited for this proposal is the possibility that spectrum will lie fallow for some period of time. Tentative Decision ¶ 152. This is very unlikely to be the case in the largest markets where ATV most probably first will be implemented. And in the smaller markets, where stations can be expected to move more slowly in incurring the substantial costs of converting to ATV, there is much less demand for spectrum (particularly temporary spectrum) among nonbroadcast users as well.

Here again, MST believes the Commission should wait until we have gone considerably further in assessing the tradeoffs among spectrum requirements, quality and cost, and towards picking a particular ATV transmission system before seriously evaluating the utility of such flexible usage.

Broadcasting is the most dependent of all video media upon universal coverage. There is a systemic gain (or loss) that results from the coverage of each individual broadcast station that may not be reflected in the value of

that coverage to the station itself. The implementation of ATV will be critical to the long-term survival of the industry and should not be placed at risk to individual interests.

Finally, notwithstanding limited forays through the use of vertical blanking intervals and subcarriers, the broadcast industry has very little experience in the marketing of spectrum itself. As graphically demonstrated by the current status of the savings and loan industry, the "transition" from a regulated to an unregulated environment can be tumultuous and even fatal, not just for individual companies but for virtually an entire industry. Whatever the merits of the more limited proposal now placed on the table in the Tentative Decision, MST continues to believe that the implementation of broadcast ATV is a far from ideal opportunity for allocational experimentation by the Commission.

#### 4. Eligibility of Applicants

MST supports the Commission's proposal to limit eligibility for supplemental ATV Spectrum to existing licensees. Tentative Decision ¶¶ 136-138. The rapid and efficient implementation of a terrestrial broadcast ATV System can be accomplished only by granting to existing broadcast licensees any supplemental spectrum which may be needed. Because of the clear public interest in making the transition to ATV at the earliest feasible time and without

interrupting or degrading the existing NTSC service, MST considers it to be clear that there are no significant legal impediments to taking this action without entertaining competing applications for the new channels.

C. Amending the Current Table/Repacking

The Tentative Decision notes that it may be desirable to consider limited reassignments of existing stations in a few of the most densely-packed markets in order to maximize the amount of ATV spectrum. Tentative Decision ¶ 92.

MST concurs in this view but notes that wholesale reassignment or "repacking" of the VHF and UHF spectrum appears to be unlikely to yield significant new ATV spectrum. Studies conducted by the Spectrum Utilization Working Party of the ATV Advisory Committee's Planning Subcommittee, using data generated by the Commission's Office of Engineering and Technology, found that the current NTSC allocation plan is in fact quite spectrally efficient.

Repacking the VHF and UHF spectrum using 6 MHz-wide channels would yield few additional channels. Repacking to accommodate 9 MHz-wide channels could not provide spectrum for all existing licensees unless the system used were significantly more robust and benign than NTSC transmission. However, there is sufficient spectrum to implement a more robust and benign system using an augmentation or simulcast approach that would cause



considerably less disruption than a repacking scenario. See Preliminary Analysis of VHF & UHF Spectrum Scenarios - Part II (Repacking)(PS/WP3-0066).

## II. Standards Issues

MST follows the Joint Comments in strongly urging the Commission to assert immediately that it will take all necessary measures, including adopting receiver and transmission specifications, to assure the implementation of a single broadcast ATV standard or family of standards. By making a firm declaration now, the Commission will promote industry consensus and greatly reduce the likelihood and scope of subsequent intervention.

### A. Compatibility with NTSC

The Tentative Decision asks whether the broadcast industry would provide NTSC compatibility without Commission action. Tentative Decision ¶ 126. The answer is yes, if the Commission allocates supplemental spectrum so as to protect all existing stations from additional interference. Within the confines of such an allocation (or, of course, if the ATV system that is selected is a single-channel system), broadcasters can be expected to desire strongly to continue to provide service to their existing viewers.

The Commission should not, however, specify at this time the precise degree of quality of NTSC service which must be maintained. A preliminary review of the proponent systems indicates that some systems will cause

some degradation to the quality of existing service. This is, however, only one variable, albeit an important one, to weigh against the other advantages and disadvantages of individual systems during the evaluation process. Until all of these other variables have been quantified in the testing process, it is premature to establish minimum quality standards for NTSC reception. <sup>3/</sup>

B. Compatibility With Alternative Media

MST believes that the Commission should encourage compatibility with alternative media and supports the Joint Comments in this regard. The ATV Advisory Committee's Interim Report provides a useful start in this direction with its suggestion that the Commission require all ATV receivers to be equipped with component video inputs. Tentative Decision ¶ 130.

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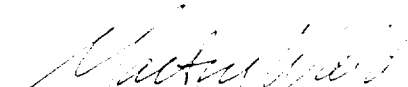
<sup>3/</sup> MST also supports the conclusion in the Tentative Decision that it is premature to contemplate relaxation or repeal of the NTSC standard, except in the context of specific waiver requests. Tentative Decision ¶ 109.

III. Conclusion

Broadcasters and other segments of the video industry are moving effectively and creatively to implement the emerging technology of advanced television. MST applauds the Commission's tentative decisions in support of broadcast ATV, and urges the Commission not to take any premature actions that will unnecessarily impede ATV development or prevent broadcasters from providing the public with the full benefits of ATV.

Respectfully submitted,

THE ASSOCIATION OF  
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